



US009924816B2

(12) **United States Patent**
Oakes

(10) **Patent No.:** **US 9,924,816 B2**
(45) **Date of Patent:** **Mar. 27, 2018**

(54) **SYSTEM AND METHOD FOR HOLDING CUTLERY TOGETHER**

(75) Inventor: **Shawn A. Oakes**, Ripon, WI (US)

(73) Assignee: **GPCP IP HOLDINGS LLC**, Atlanta, GA (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 1312 days.

(21) Appl. No.: **13/156,073**

(22) Filed: **Jun. 8, 2011**

(65) **Prior Publication Data**

US 2011/0296693 A1 Dec. 8, 2011

Related U.S. Application Data

(60) Provisional application No. 61/352,581, filed on Jun. 8, 2010.

(51) **Int. Cl.**
A47G 21/06 (2006.01)
A47F 1/10 (2006.01)

(52) **U.S. Cl.**
CPC *A47G 21/06* (2013.01); *A47F 2001/103* (2013.01)

(58) **Field of Classification Search**
CPC *A47G 21/02*; *A47G 21/06*; *A47G 19/06*; *B29L 2031/286*
USPC 30/123, 137, 142, 143, 147, 148, 149, 30/150; 7/110–113; 206/541, 553; 156/290–292
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

46,832 A	3/1865	Thorpe
592,105 A	10/1897	Barnes
D32,913 S	7/1900	Graf et al.
703,718 A	7/1902	Cammann
716,058 A	12/1902	Lang et al.
925,485 A	2/1909	Lafler
999,837 A	8/1911	Morris et al.
1,053,387 A	2/1913	Hawley
1,146,447 A	7/1915	Prommel
1,182,793 A	5/1916	Richardson
1,259,927 A	3/1918	Swift
1,261,835 A	4/1918	Martin
1,353,109 A	9/1920	Carr
1,355,583 A	10/1920	Zeidler et al.
1,482,071 A	1/1924	Duff et al.
1,497,585 A	6/1924	Poole
1,504,098 A	8/1924	Cathey
1,546,077 A	7/1925	Hunter et al.
1,547,151 A	7/1925	Walling
1,560,938 A	11/1925	Lund
1,577,302 A	3/1926	Schultz

(Continued)

FOREIGN PATENT DOCUMENTS

CA	2545745 A1	11/2006
CN	2865478 Y	2/2007

(Continued)

OTHER PUBLICATIONS

JP2004261336 translation; Matsushima et al, Sep. 24, 2004.*

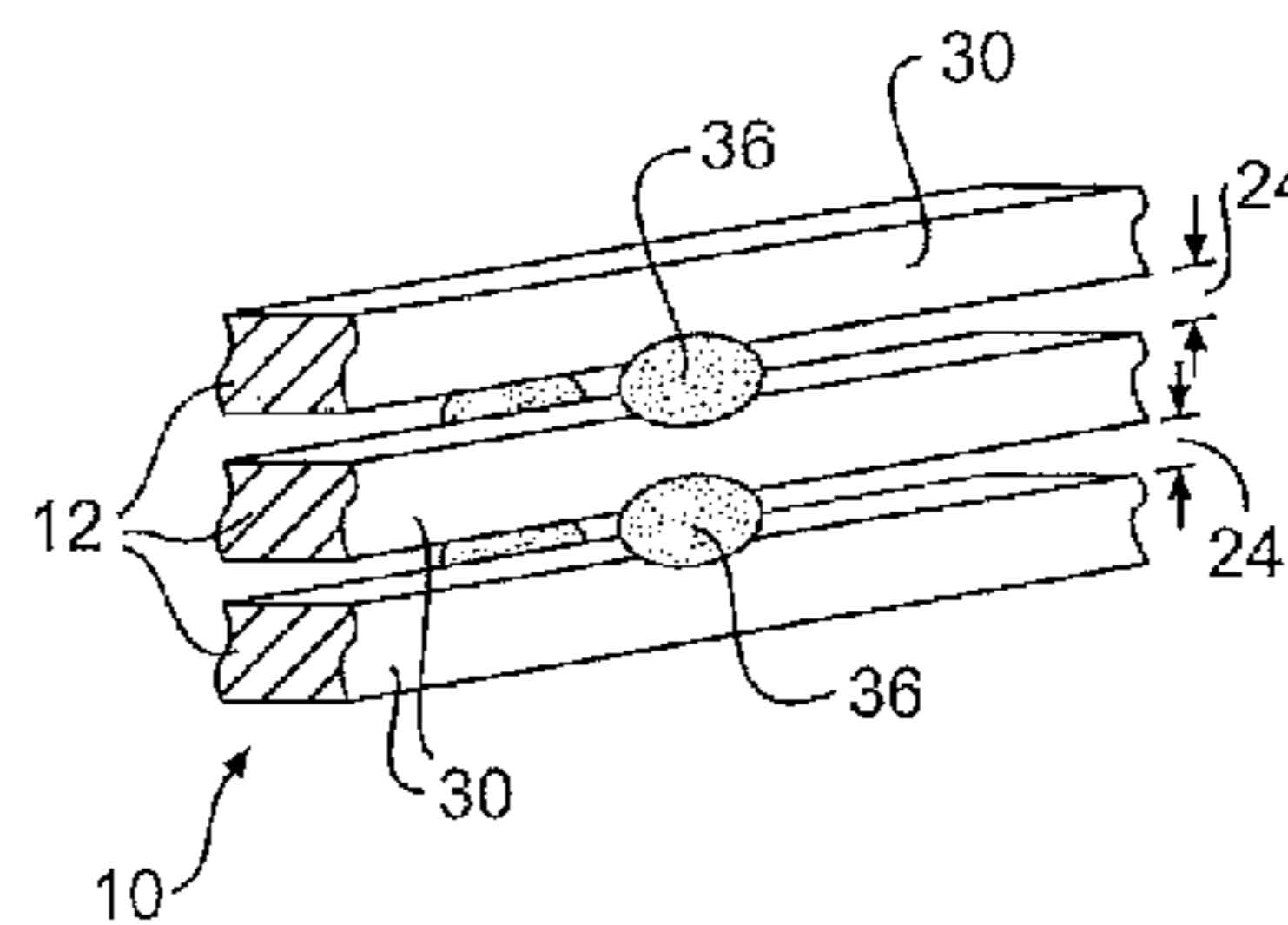
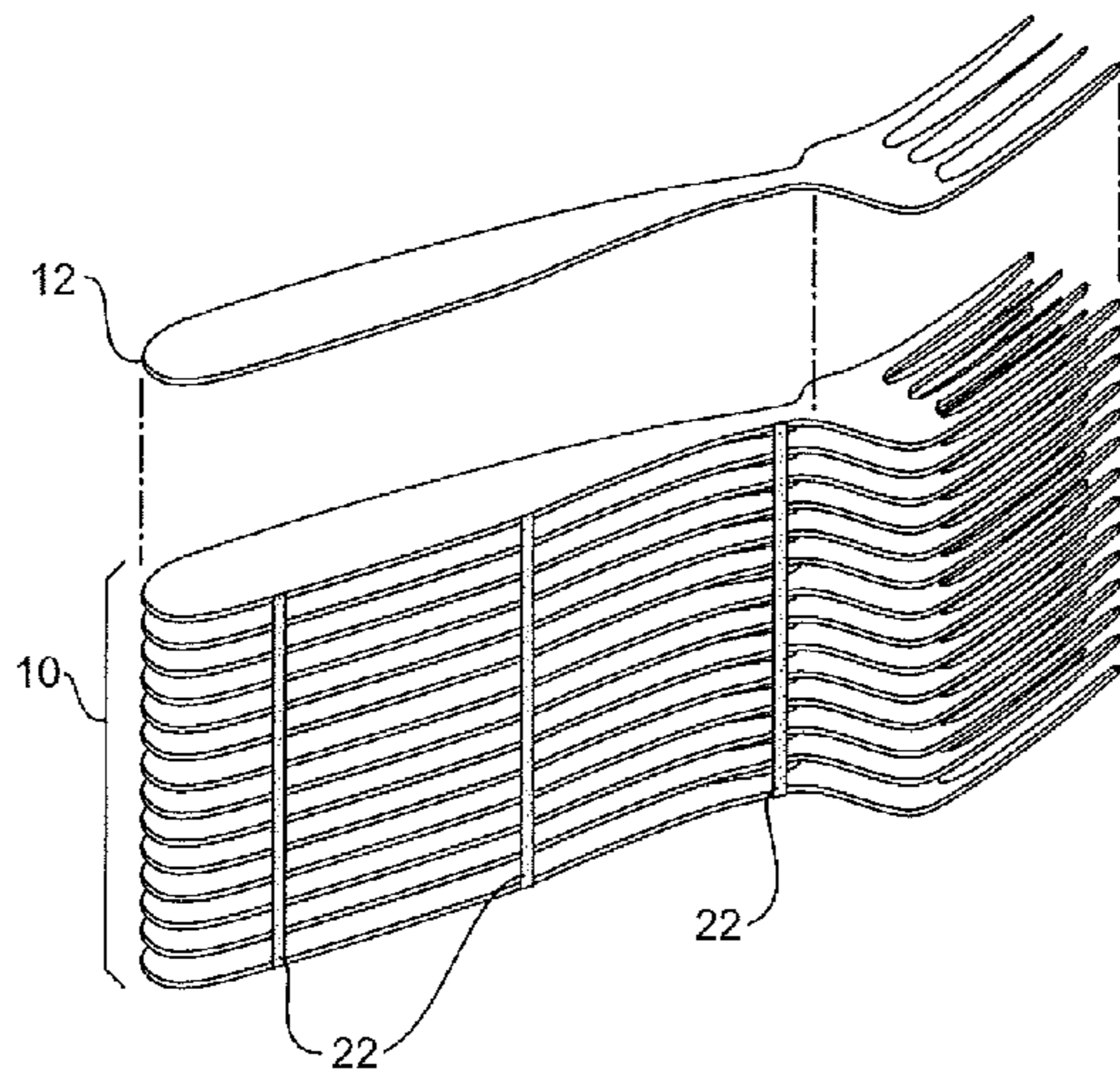
(Continued)

Primary Examiner — Laura M Lee

(57) **ABSTRACT**

A module of cutlery may include a plurality of utensils that include a formable material, wherein at least two of the utensils are separably coupled to one another via at least one of an adhesive and a common portion of the formable material.

10 Claims, 5 Drawing Sheets



(56)

References Cited

U.S. PATENT DOCUMENTS

1,610,001 A	12/1926	Foster	3,163,327 A	12/1964	Maxwell
1,635,386 A	7/1927	Pierson	3,180,489 A	4/1965	McGinn
1,675,510 A	7/1928	Nolan	3,182,345 A	5/1965	Smith
1,767,634 A	6/1930	Weiss	3,191,802 A	6/1965	Lasting
1,821,377 A	9/1931	Cusick	3,263,860 A	8/1966	Haas
1,886,378 A	11/1932	Dearsley	3,279,652 A	10/1966	Willvonseder
1,936,057 A	11/1933	Hodge	3,300,087 A	1/1967	Kuypers
2,052,505 A	8/1936	Vetrosky	3,310,271 A	3/1967	King
2,053,828 A	9/1936	Harper	3,313,452 A	4/1967	Katz
2,078,984 A	5/1937	Williamson	3,334,784 A	8/1967	Morrison
2,089,378 A	8/1937	Jenkin	3,338,471 A	8/1967	De Good
2,110,189 A	3/1938	Zeidler, Sr.	3,371,821 A	3/1968	Abood, Jr. et al.
2,141,684 A	12/1938	Diemer	3,383,018 A	5/1968	Grimsley
2,149,098 A	2/1939	Phinney	3,400,435 A	9/1968	Akesson-Rydin
2,149,099 A	2/1939	Phinney et al.	3,402,441 A	9/1968	Woskin
2,160,374 A	5/1939	Veillette	3,407,927 A	10/1968	Jones
2,184,029 A	12/1939	Wicklund	3,408,708 A	11/1968	Hawie
2,188,573 A	1/1940	Longo	3,426,941 A	2/1969	Hovekamp
D119,760 S	4/1940	Kopp	3,435,491 A	4/1969	Shears
2,207,528 A	7/1940	Witt	3,472,421 A	10/1969	Baller
2,223,347 A	12/1940	Axthelm	3,499,538 A	3/1970	Sherard
2,239,196 A	4/1941	Lunvik	3,558,006 A	1/1971	Redmond et al.
2,246,852 A	6/1941	Kale	3,587,922 A	6/1971	Oriti
2,260,596 A	10/1941	Young	3,593,908 A	7/1971	Desmond et al.
2,268,596 A	1/1942	Jerum	3,654,396 A	4/1972	Biezeveld
2,268,873 A	1/1942	Hopkins et al.	3,680,736 A	8/1972	Viessmann
2,328,486 A	8/1943	Painter	3,710,535 A	1/1973	Walter
2,340,561 A	2/1944	Renfro	3,741,410 A	6/1973	Henschke et al.
2,421,782 A	6/1947	Gibbs et al.	3,747,803 A	7/1973	Zoepf et al.
2,427,321 A	9/1947	Casey et al.	3,786,959 A	1/1974	Greb et al.
2,431,121 A	11/1947	Hunter	3,851,762 A	12/1974	Liblick
2,433,736 A	12/1947	Carew	3,861,563 A	1/1975	Lisbin
2,445,026 A	7/1948	Frank	3,862,702 A	1/1975	Johnson
2,472,051 A	5/1949	Testi	3,897,886 A	8/1975	Franklin
2,497,718 A	2/1950	Earley et al.	3,932,978 A	1/1976	Kinney
2,503,741 A	4/1950	Johnson	3,944,128 A	3/1976	Hogan et al.
2,526,136 A	10/1950	Holzknacht	3,972,118 A	8/1976	Richard
2,571,668 A	10/1951	Booth et al.	3,987,901 A	10/1976	Dullinger
2,577,344 A	12/1951	Masure	3,998,238 A	12/1976	Nigro
2,624,093 A	1/1953	Hatch et al.	4,005,801 A	2/1977	Musser et al.
2,635,025 A	4/1953	Ziska	4,043,203 A	8/1977	Montesi
2,646,874 A	7/1953	Testi	4,048,915 A	9/1977	Martin
2,651,093 A	9/1953	Lynch	4,091,915 A	5/1978	Claasen
2,671,555 A	3/1954	Shnitzler	4,120,662 A	10/1978	Fosslien
2,692,691 A	10/1954	Harriss et al.	4,134,519 A	1/1979	Barnett et al.
2,695,125 A	11/1954	Bowen	4,146,123 A	3/1979	Cottrell
2,752,678 A *	7/1956	Welch 30/324	4,271,999 A	6/1981	Stravitz
2,800,013 A	7/1957	George	4,288,003 A	9/1981	Fries
2,806,634 A	9/1957	Baumgartner	4,308,974 A	1/1982	Jones
2,843,909 A	7/1958	Eilertsen	4,317,284 A *	3/1982	Prindle 30/340
2,845,679 A	8/1958	Baruch	4,382,514 A	5/1983	Williams et al.
2,857,645 A	10/1958	Vogelsang	4,489,854 A	12/1984	Wenkman et al.
2,868,344 A	1/1959	Shields	4,524,512 A *	6/1985	Formo et al. 30/147
2,870,505 A	1/1959	Hawie	4,570,536 A	2/1986	Dodd
2,877,490 A	3/1959	Greninger	4,571,773 A	2/1986	Yuda
2,877,926 A	3/1959	Abbe	4,574,423 A	3/1986	Ito et al.
2,880,907 A	4/1959	Mainers	D284,442 S	7/1986	Chan
2,889,076 A	6/1959	Van Schie	4,601,386 A	7/1986	Antonello
2,907,512 A	10/1959	Leone	4,610,087 A	9/1986	Mickelson et al.
2,911,127 A	11/1959	Driss et al.	4,614,004 A	9/1986	Oshida
2,924,357 A	2/1960	Kingsley et al.	4,624,616 A	11/1986	Freese et al.
2,946,431 A	7/1960	Nissen	4,638,921 A	1/1987	Sigl et al.
2,946,481 A	7/1960	Carew	4,662,536 A	5/1987	Powers
2,953,170 A	9/1960	Bush	4,666,037 A	5/1987	Weissman et al.
2,954,948 A	10/1960	Johnson	4,666,060 A	5/1987	Bouldin
2,965,262 A	12/1960	Du Bois	4,691,811 A	9/1987	Arakawa et al.
3,037,257 A	6/1962	Girodet	4,697,673 A	10/1987	Omata
3,052,006 A	9/1962	Jonas	4,707,251 A	11/1987	Jenkins
3,083,879 A	4/1963	Coleman	4,715,514 A	12/1987	Vidondo
3,095,114 A	6/1963	Tobias	4,789,064 A	12/1988	Segal
3,100,842 A	8/1963	Tellefsen	4,793,539 A	12/1988	Haenni et al.
3,114,475 A	12/1963	Etes	4,835,864 A *	6/1989	Tang 30/150
3,116,152 A	12/1963	Smith	4,863,033 A	9/1989	Buj
3,132,765 A	5/1964	Florendo	4,884,718 A	12/1989	Leahy
3,146,908 A	9/1964	Perri et al.	D305,709 S	1/1990	Blignaut
			4,896,792 A	1/1990	Marchand
			4,915,578 A	4/1990	Becker
			4,921,106 A	5/1990	Spatafora et al.
			4,950,120 A	8/1990	Barnes

(56)

References Cited

U.S. PATENT DOCUMENTS

2005/0224531 A1 10/2005 Bulovic
 2005/0230222 A1 10/2005 Olson et al.
 2005/0252057 A1 11/2005 Lavi
 2006/0000190 A1 1/2006 Behnke et al.
 2006/0042986 A1 3/2006 Simkowski et al.
 2006/0053638 A1 3/2006 Sumner-Trivisani et al.
 2006/0218795 A1 10/2006 Santa Cruz et al.
 2006/0249531 A1 11/2006 Litchfield et al.
 2007/0035943 A1 2/2007 Wang
 2007/0108141 A1 5/2007 Smith et al.
 2007/0131705 A1 6/2007 Behravesh et al.
 2007/0193968 A1* 8/2007 Smith et al. 211/70.7
 2007/0214650 A1 9/2007 Tomazini
 2007/0250391 A1 10/2007 Prade et al.
 2008/0118609 A1 5/2008 Harlfinger et al.
 2008/0121650 A1 5/2008 Smith
 2008/0128445 A1 6/2008 Huang et al.
 2009/0194557 A1 8/2009 Van Deursen
 2009/0200315 A1 8/2009 Blondeel
 2010/0084418 A1 4/2010 Reinsel et al.
 2010/0147869 A1 6/2010 Iliffe et al.
 2010/0170915 A1 7/2010 Reinsel et al.
 2011/0180562 A1 7/2011 Reinsel et al.
 2011/0226797 A1 9/2011 Reinsel et al.
 2012/0036724 A1* 2/2012 Walters 30/340
 2012/0047744 A1 3/2012 Walters
 2012/0080444 A1 4/2012 Smith et al.
 2012/0110746 A1 5/2012 Allard Serrano et al.
 2012/0145734 A1 6/2012 Walters
 2012/0145735 A1 6/2012 Erickson et al.
 2012/0145736 A1 6/2012 Walters et al.
 2013/0032609 A1 2/2013 Righetti et al.
 2013/0043272 A1 2/2013 Oakes
 2013/0126548 A1 5/2013 Pourian et al.
 2013/0134211 A1 5/2013 Linkel
 2013/0152406 A1 6/2013 McFarland
 2013/0193157 A1 8/2013 Jongen et al.
 2014/0069930 A1 3/2014 Oakes
 2014/0117036 A1 5/2014 Smith et al.
 2014/0191024 A1 7/2014 Wnek et al.
 2014/0299656 A1 10/2014 Wintermute
 2015/0001235 A9 1/2015 Smith
 2015/0028045 A1 1/2015 Oakes et al.
 2015/0028046 A1 1/2015 Oakes et al.
 2015/0041363 A1 2/2015 Freeman et al.
 2015/0041484 A1 2/2015 Oakes
 2015/0048108 A1 2/2015 Borke

FOREIGN PATENT DOCUMENTS

CN 101495015 A 7/2009
 DE 7033238 U1 11/1970
 DE 7127677 U 11/1971
 DE 3151268 7/1983
 DE 4139938 6/1993
 DE 9316566 U1 1/1994
 DE 19906369 2/2000
 DE 202005013647 U1 7/2006
 EP 257109 * 3/1988 A47G 21/06
 EP 0286538 A1 10/1988
 EP 0856272 A2 1/1999
 EP 1022107 A1 7/2000
 EP 1217923 B1 9/2003
 EP 1358827 A2 11/2003
 EP 1213985 B1 6/2004
 EP 1514497 A1 3/2005
 EP 1719438 A1 11/2006
 EP 1864596 A2 12/2007
 FR 2889507 A1 2/2007
 JP 06-121727 A 5/1994
 JP JH06121727 A 5/1994
 JP 08011934 A 1/1996
 JP 08047440 A 2/1996
 JP 3042582 U 10/1997
 JP 09-294662 * 11/1997 A47G 21/10

JP 2000-202851 A 7/2000
 JP 2001354214 A 12/2001
 JP 2004-261337 A 9/2004
 JP 2007319493 A 12/2007
 KR 2019910008085 10/1991
 KR 1020090071515 A 7/2009
 KR 100954569 B1 4/2010
 TW M287639 U 2/2006
 TW M293720 U 7/2006
 WO 01/05280 A1 1/2001
 WO 01/05281 A1 1/2001
 WO 01/68492 A1 9/2001
 WO 2004/028309 A1 4/2004
 WO 2007/049982 A1 5/2007
 WO 2007/012606 A1 11/2007
 WO 2008/058187 A2 5/2008
 WO 2009137367 A2 11/2009

OTHER PUBLICATIONS

JP09-294662 english translation Nov. 1997, Kamishina, Masashi A47G021/10.*
 International Search Report and the Written Opinion of the International Search Authority dated Feb. 9, 2012.
 International Search Report and Written Opinion for PCT/US2011/044931 dated Feb. 28, 2012.
 International Search Report and Written Opinion for PCT/US2011/044934 dated Mar. 6, 2012.
 International Search Report and Written Opinion for PCT/US2011/058767 dated Feb. 29, 2012.
 International Search Report and Written Opinion for PCT/US2011/064057 dated Feb. 29, 2012.
 International Search Report and Written Opinion for PCT/US2011/058329 dated Feb. 29, 2012.
 Peel Adhesion for Single Coated Pressure-Sensitive Tapes 180 Angle, Aug. 1989, pp. 21-22.
 Tack Rolling Ball, Aug. 1989, pp. 29-30.
 Holding Power of Pressure-Sensitive Tape, Aug. 1989, pp. 31-33.
 European Patent Report 06009258.2, dated Jul. 24, 2006, five pages, Munich, Germany.
 International Search Report and Written Opinion for PCT/US07/83752, dated Mar. 11, 2008, ten pages, European Patent Office, Munich, Germany.
 Partial International Search Report for PCT/US2007/083922, dated Jul. 8, 2008, two pages.
 European Search Report for EP 08 014 387.8 dated Nov. 11, 2008, two pages, European Patent Office, Munich, Germany.
 International Search Report and Written Opinion for PCT/US2007/083922, dated Nov. 17, 2008, 13 pages, European Patent Office, Rijswijk, Netherlands.
 International Search Report and Written Opinion for PCT/US2009/059915, dated Feb. 3, 2010, 13 pages, European Patent Office, Munich, Germany.
 Office Actions for U.S. Appl. No. 11/556,808, filed Nov. 6, 2006.
 Office Actions for U.S. Appl. No. 11/415,836, filed May 2, 2006.
 Office Actions for U.S. Appl. No. 11/936,401, filed Nov. 7, 2007.
 Office Action for U.S. Appl. No. 12/349,203, filed Jan. 6, 2009.
 Supplementary European Search Report dated Sep. 25, 2013 for Application No. 11793088.3.
 International Searching Authority, "International Search Report and Written Opinion for PCT/US2014/047463", dated Nov. 26, 2014, 22 pages, Korean Intellectual Property Office, South Korea.
 International Searching Authority, "International Search Report and Written Opinion for PCT/US2014/050166", dated Nov. 20, 2014, 11 pages, Korean Intellectual Property Office, South Korea.
 International Searching Authority, "International Search Report and Written Opinion for PCT/US2014/050169", dated Jan. 9, 2015, 11 pages, Korean Intellectual Property Office, South Korea.
 International Searching Authority, "International Search Report and Written Opinion for PCT/US2014/051632", dated Dec. 3, 2014, 9 pages, Korean Intellectual Property Office, South Korea.
 International Searching Authority, "International Search Report and Written Opinion for PCT/US2014/051639", dated Dec. 9, 2014, 9 pages, Korean Intellectual Property Office, South Korea.

(56)

References Cited

OTHER PUBLICATIONS

International Search Report and Written Opinion for PCT/US2010/
000051, dated Aug. 16, 2010, 6 pages.

* cited by examiner

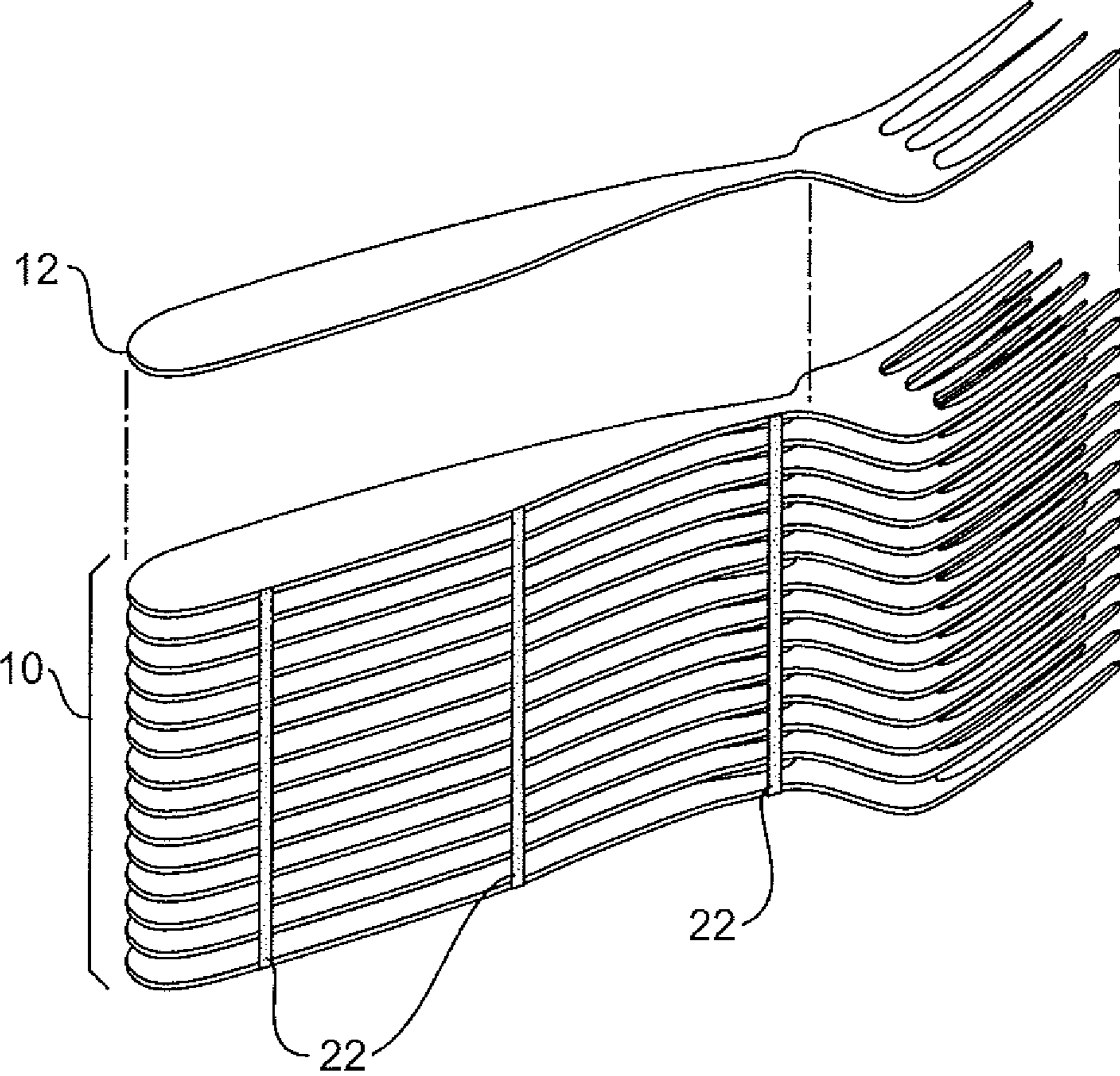


FIG. 1

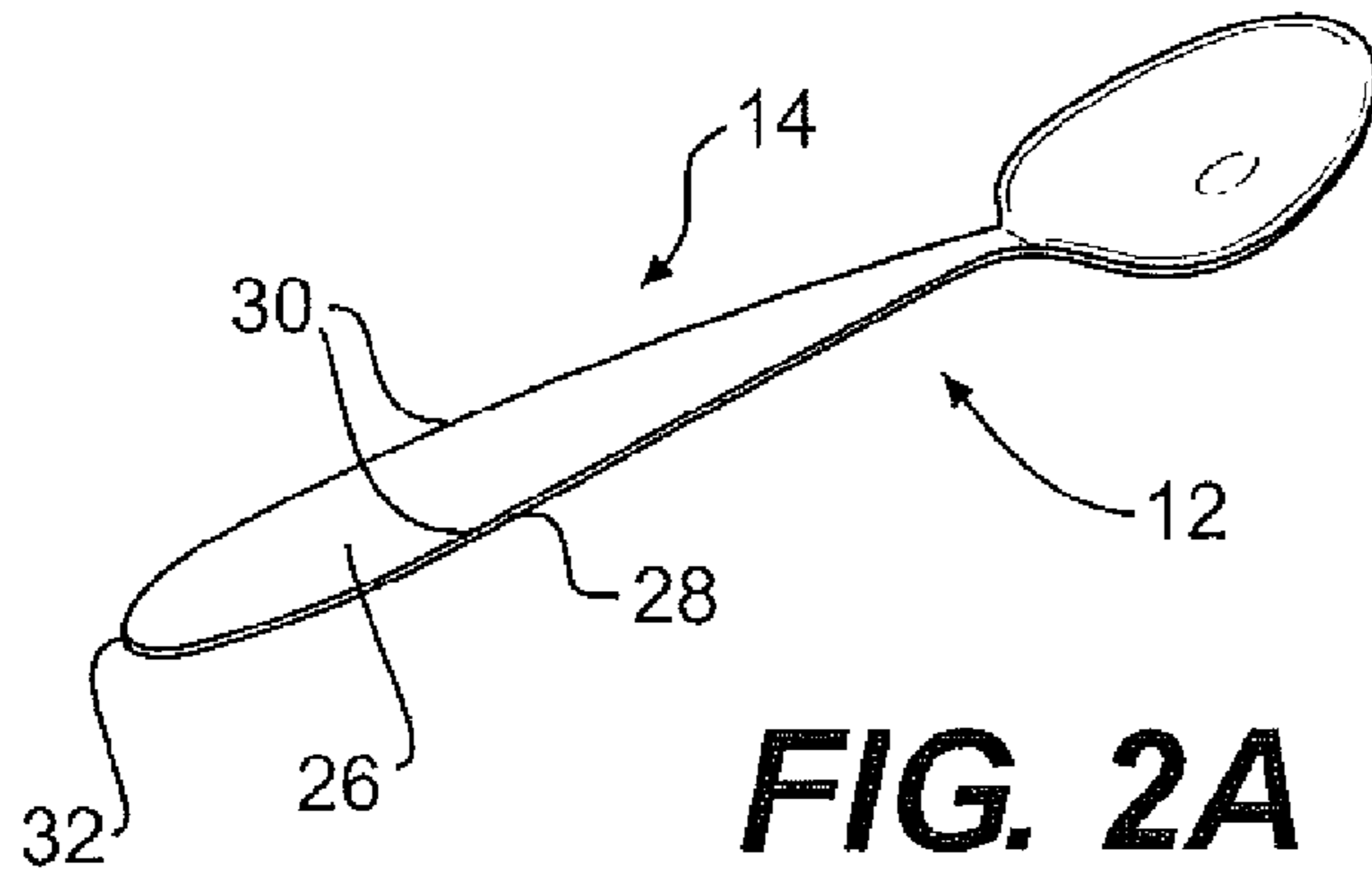


FIG. 2A

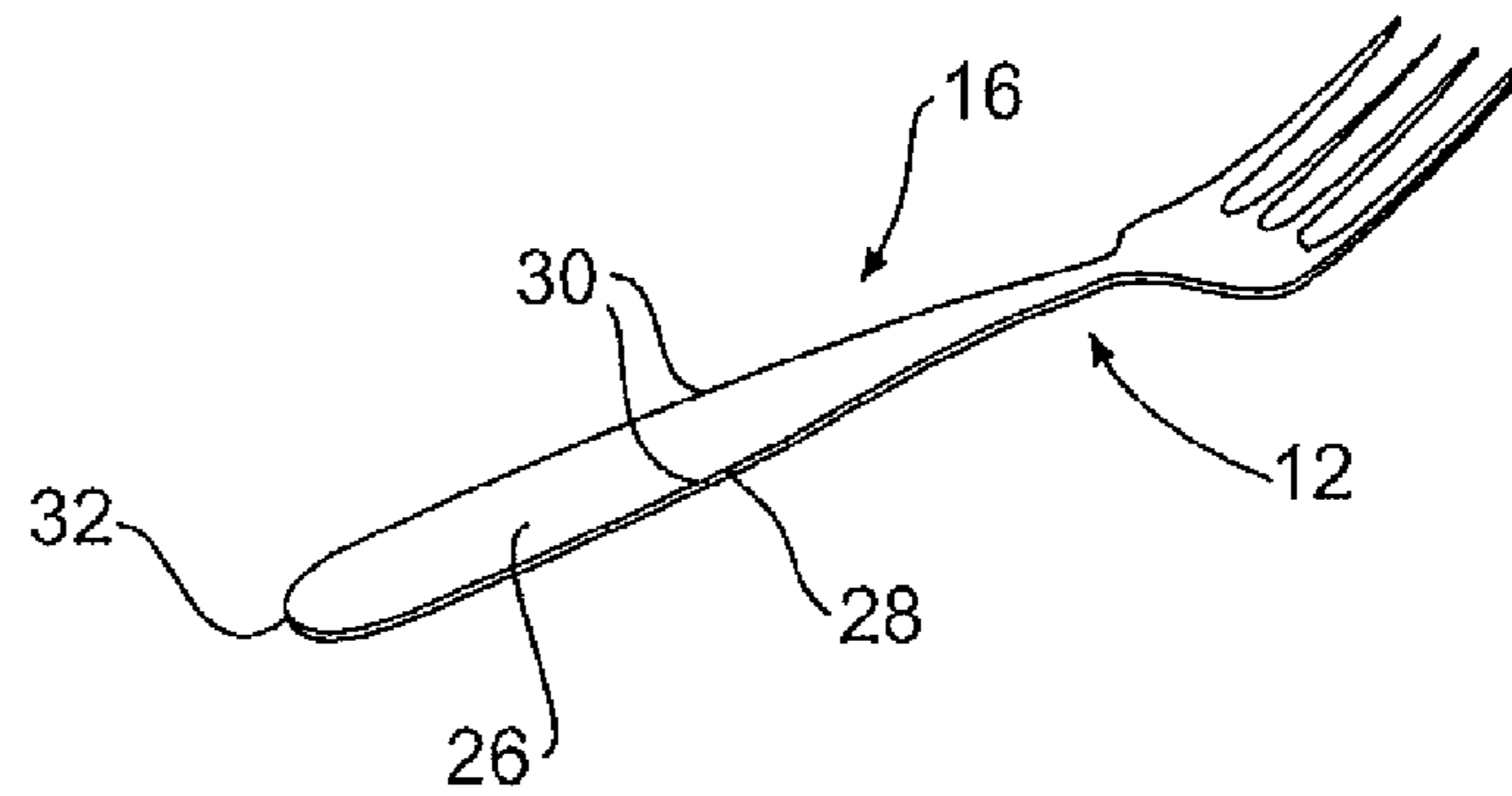


FIG. 2B

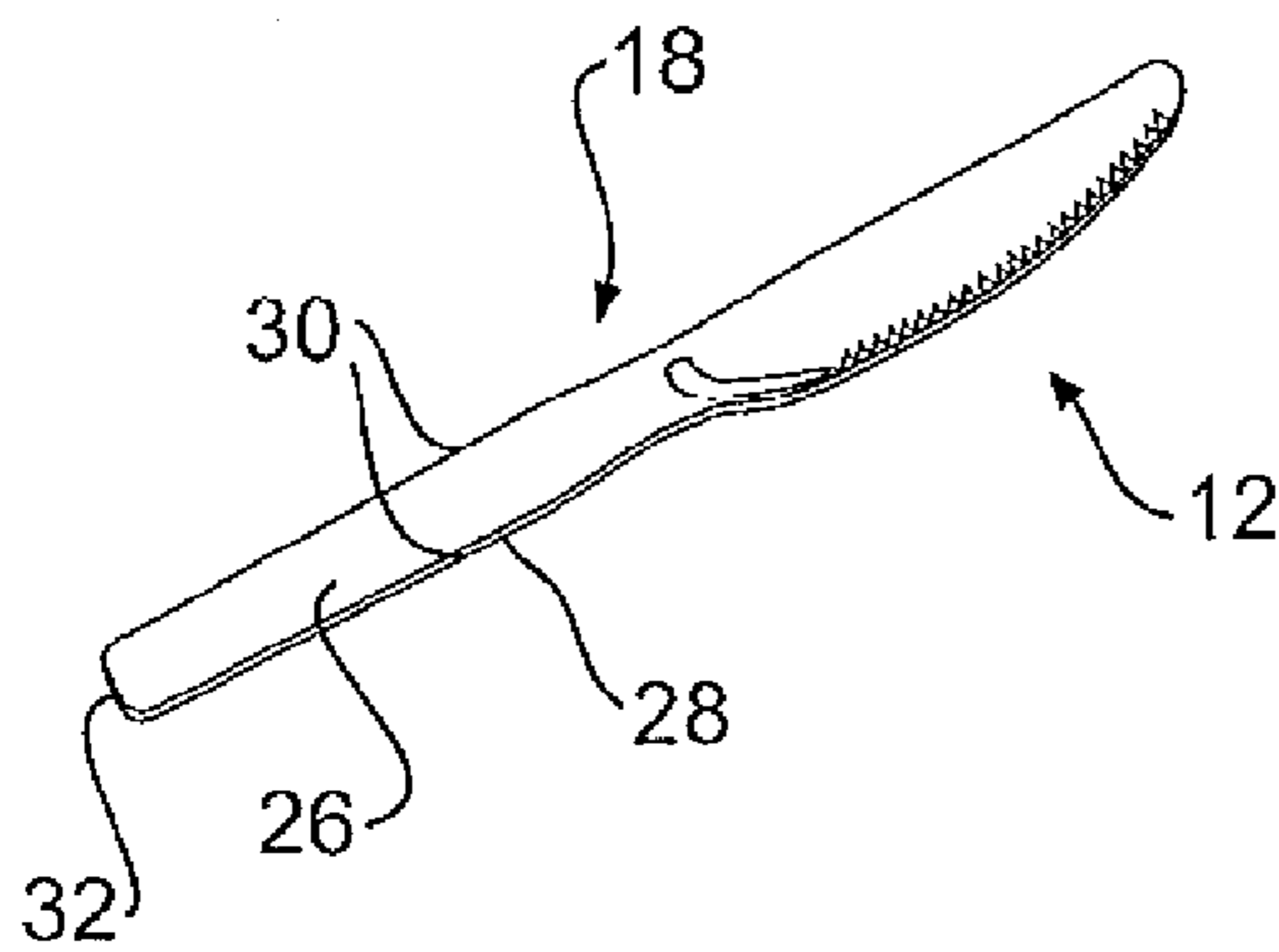


FIG. 2C

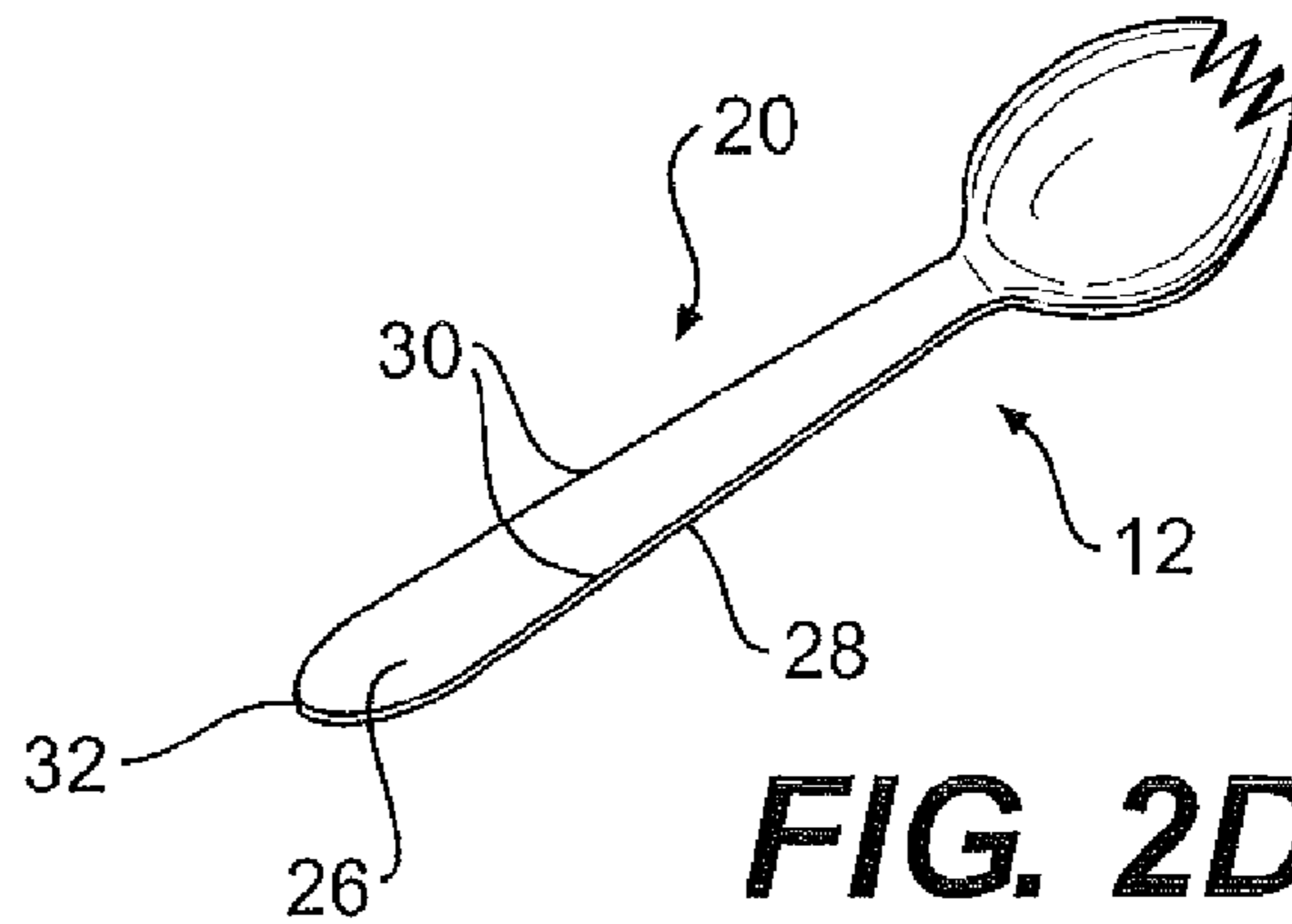
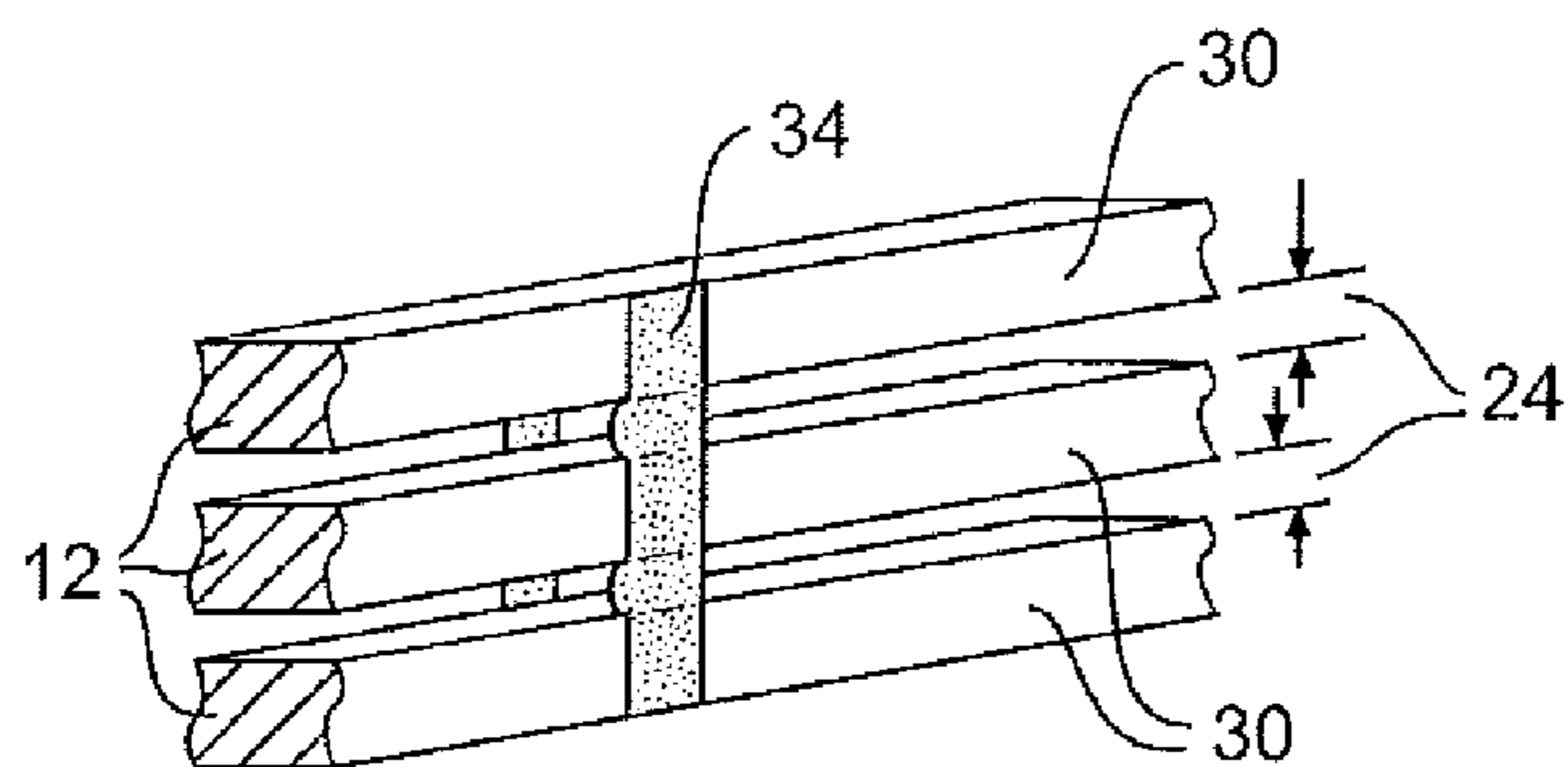
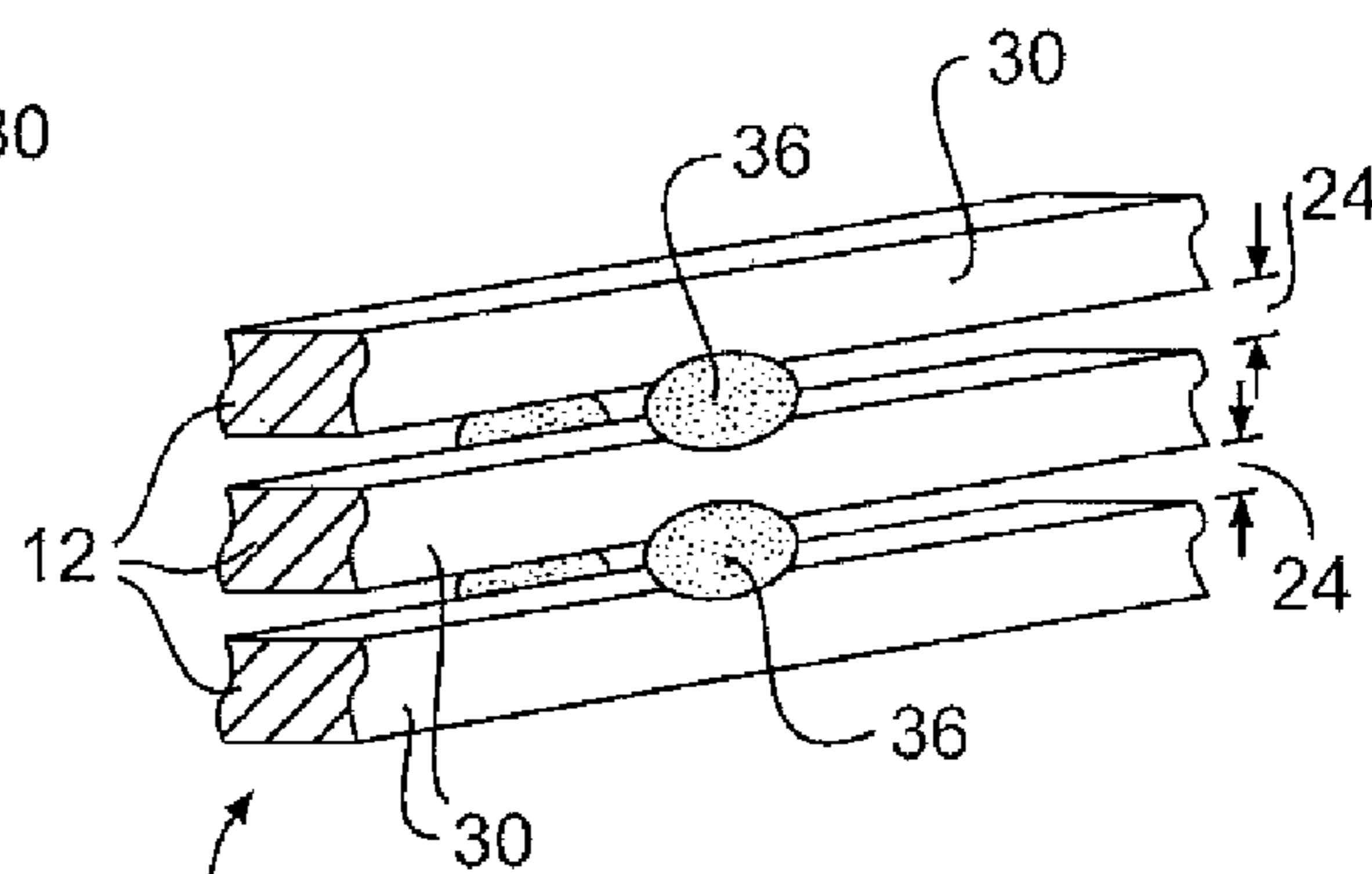


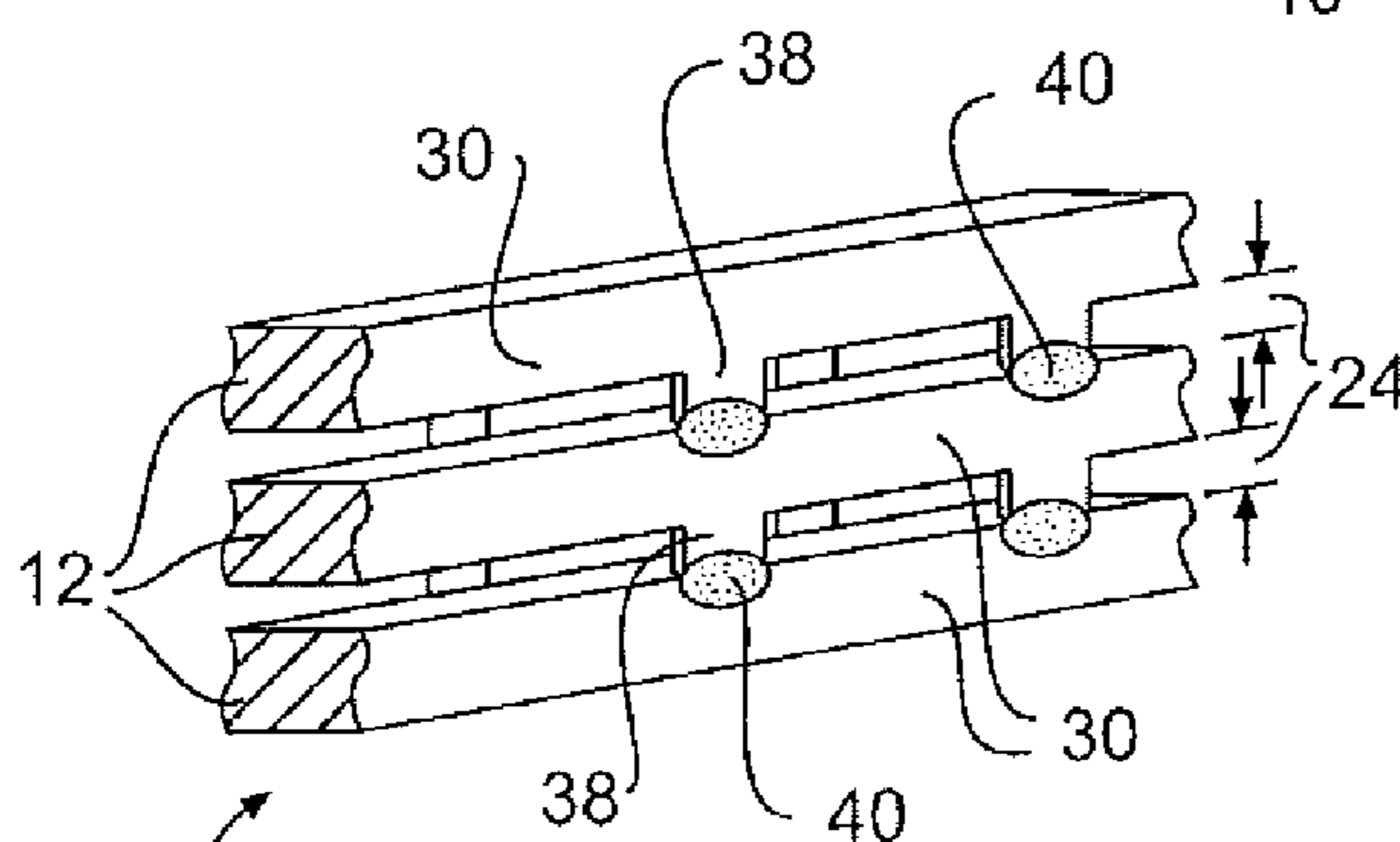
FIG. 2D



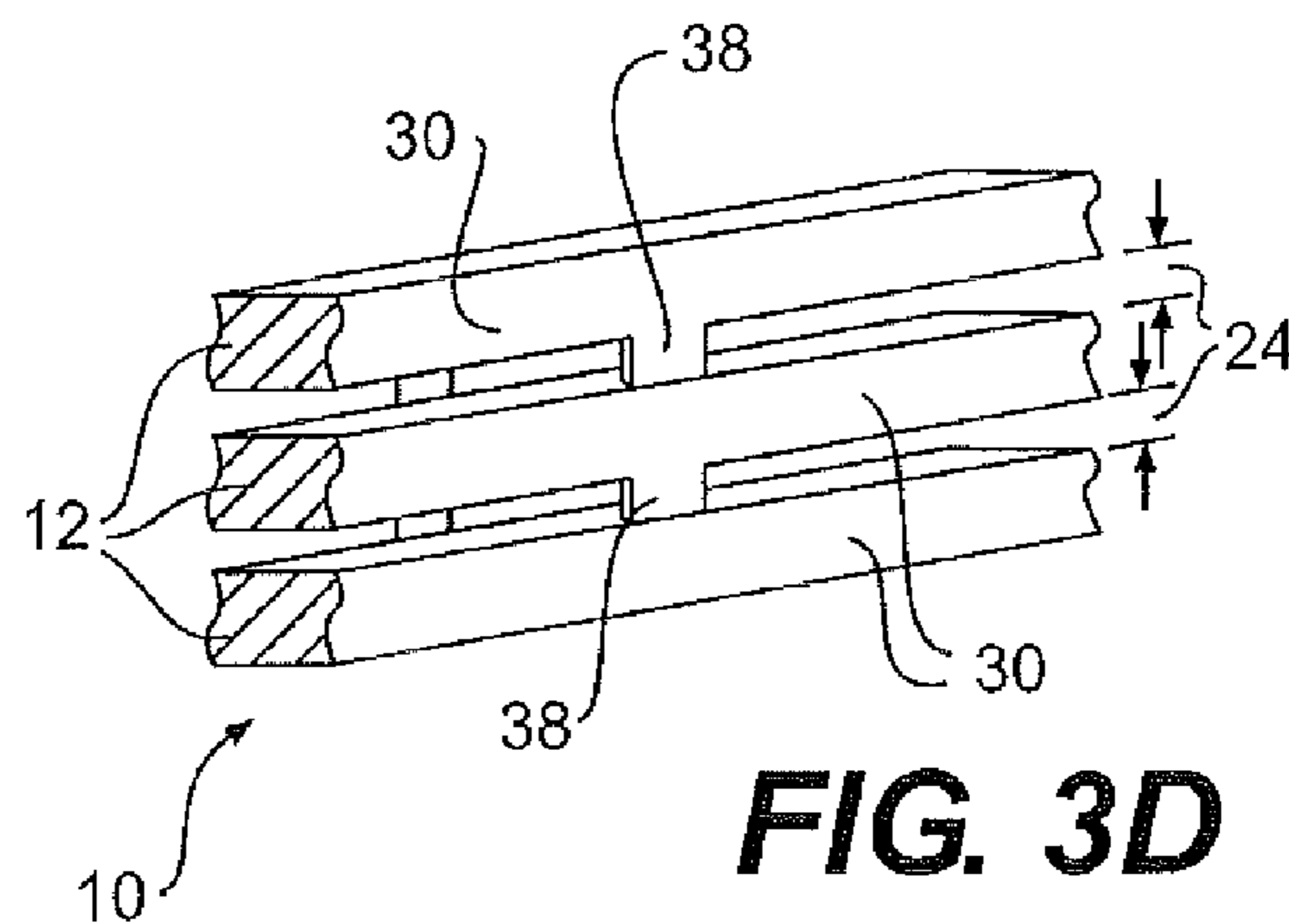
10 **FIG. 3A**



10 **FIG. 3B**



10 **FIG. 3C**



10 **FIG. 3D**

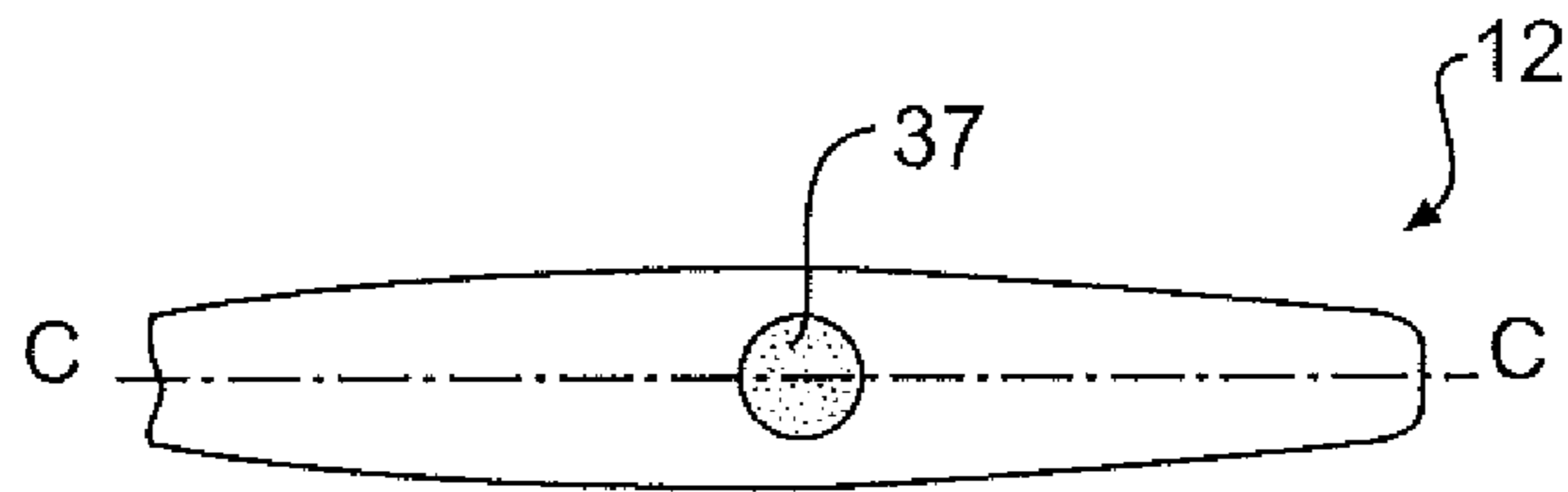


FIG. 3E

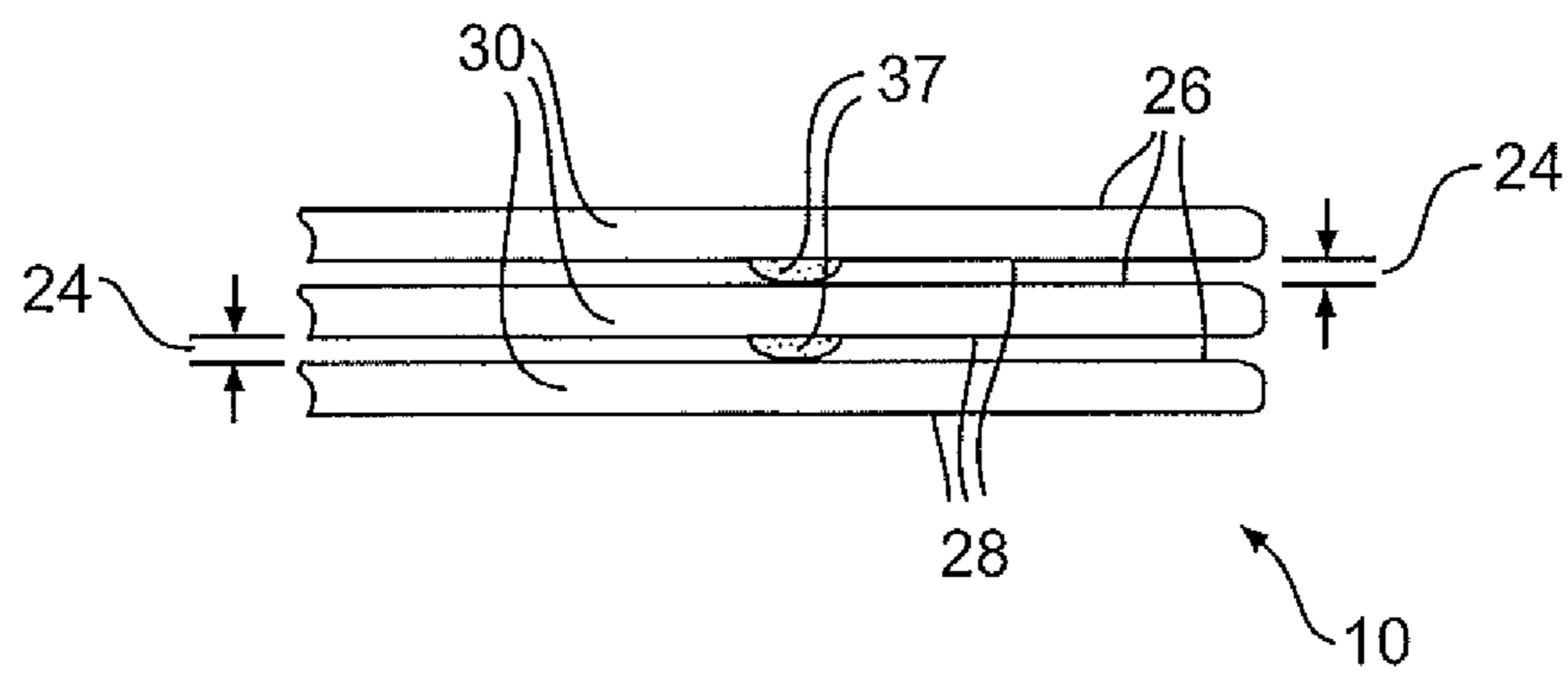


FIG. 3F

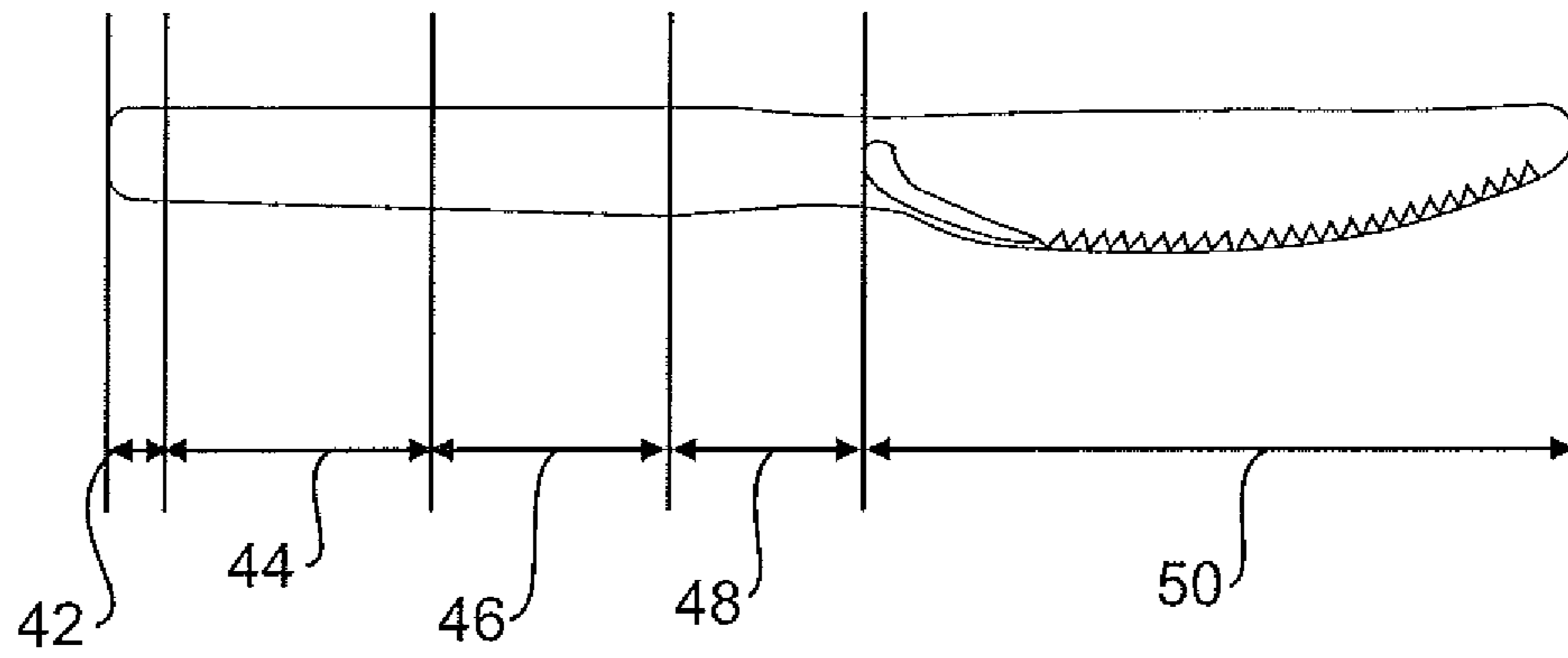


FIG. 4

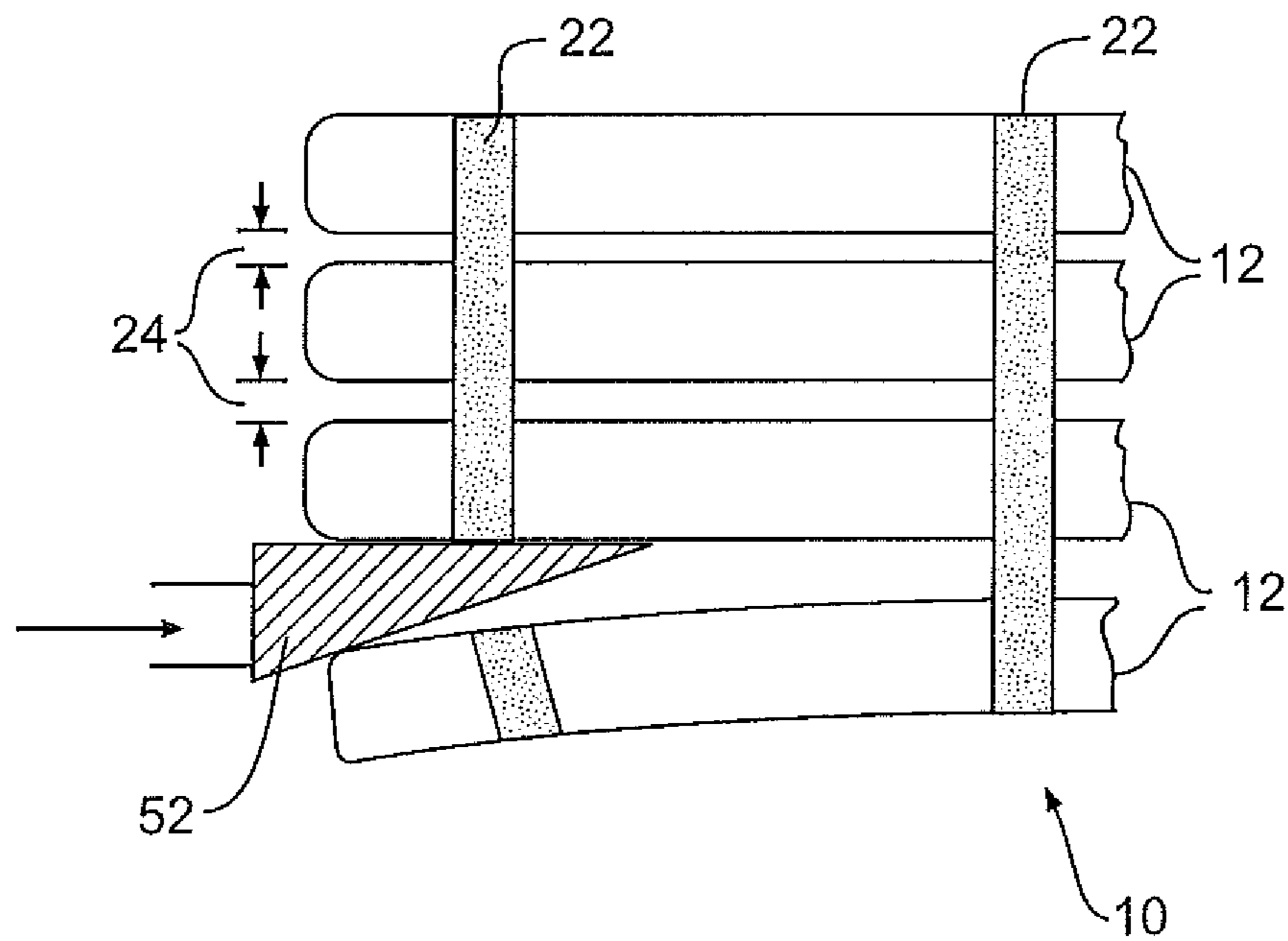


FIG. 5

SYSTEM AND METHOD FOR HOLDING CUTLERY TOGETHER

CROSS-REFERENCE TO RELATED APPLICATION

This application claims priority to U.S. Provisional Patent Application No. 61/352,581 filed Jun. 8, 2010, the disclosure of which is incorporated herein in its entirety by this reference.

FIELD OF THE DISCLOSURE

The present disclosure relates to a system and method for holding disposable cutlery together. In particular, the present disclosure relates to a module of disposable cutlery and methods for forming and dispensing disposable cutlery from the module.

BACKGROUND

It may be desirable to provide disposable cutlery, such as multiple utensils, for example, spoons, forks, knives, and sporks, in a configuration where the utensils are secured in groups of more than one utensil. Such a configuration may serve to save space in the packaging and storing of multiple utensils. Additionally, such a configuration may enhance the efficiency of loading a utensil dispenser. In particular, when providing utensils to patrons via a utensil dispenser, the provider may need to load the single utensils one-at-a-time into the utensil dispenser, a process that may be tedious and inefficient. Further, loading the utensils in such a manner may not result in reliable one-at-a-time dispensing, for example, if the utensils are not loaded properly.

It may also be desirable to provide secured utensils that do not produce excess waste when used in conjunction with a dispenser. For example, multiple utensils may be secured to each other via a band, wrapper, or other securing device, or they may be provided in a cartridge containing a plurality of like utensils. However, after the band, wrapper, or other securing device is removed from the utensils, such securing device or cartridge will usually be discarded as waste.

It may be desirable to provide utensils that are not prone to flipping or otherwise changing from a desired orientation during either a process of being loaded into a dispenser or a process of being dispensed from a dispenser. For example, during dispensing of a stack of utensils, utensils may have a tendency to flip or rotate as the stack slides within the dispenser, which may lead to jamming the dispenser. This may result in compromising the utility of the dispenser. Additionally, it may be desirable to provide utensils that are capable of being successfully dispensed from a dispenser one-at-a-time.

It may also be desirable to provide a group of secured utensils that can be divided into smaller groups of secured utensils. In particular, some types of banded utensils or cartridges of utensils may not be able to be loaded into an empty dispenser in smaller groups of secured utensils. This drawback may cause problems when, for example, only a few utensils remain in a dispenser and it is anticipated that a large number of utensils will be dispensed in the near future. In such a situation, someone responsible for restocking the dispenser must either wait for the utensils to be dispensed and risk having a delay between the time at which the dispenser is emptied and when it is reloaded with new utensils, or load a portion of a group of secured utensils and discard or store the remaining loose utensils.

Thus, it is desirable to provide a system and method for addressing one or more of the issues discussed above.

SUMMARY

In the following description, certain aspects and embodiments will become evident. It should be understood that the aspects and embodiments, in their broadest sense, could be practiced without having one or more features of these aspects and embodiments. Thus, it should be understood that these aspects and embodiments are merely exemplary.

One aspect of the disclosure relates to a module of disposable cutlery including a plurality of utensils including a formable material, wherein at least two of the utensils are separably coupled to one another via at least one of an adhesive and a common portion of the formable material. For example, the common portion of formable material may include one or more of the following: a portion of formable material formed concurrently with the utensils, via, for example, a molding process such as injection molding; a portion of formable material formed from individual utensils by, for example, softening and/or melting a portion of at least one utensil and allowing the softened and/or melted portion to cool in a configuration such that it separably couples at least two utensils via, for example, welding; or a portion of formable material formed separately and before (or after) softening and/or melting, introduced to at least two utensils such that, upon cooling, the material separably couples at least two utensils.

Another aspect of the disclosure relates to a method of securing a plurality of utensils to one another to form a module of cutlery. At least two of the utensils comprise a formable material. The method includes arranging the plurality of utensils such that the utensils are positioned adjacent to one another. The method further includes separably coupling at least two of the utensils that are positioned adjacent to one another via at least one of applying an adhesive to at least one of the two utensils, or providing a common portion of the formable material that separably couples the two utensils to one another, or both.

A further aspect of the disclosure relates to a method for dispensing a utensil from a module of cutlery. The method includes decoupling at least one utensil from the module by overcoming an adhesive bond when the utensils are coupled to one another via adhesive, or breaking a common portion when the utensils are coupled to one another via the common portion. The method further includes dispensing the at least one decoupled utensil.

Additional aspects of the disclosure will be set forth in part in the description which follows, or may be learned by practice of the disclosed exemplary embodiments.

Aside from the structural and procedural arrangements set forth above, the embodiments could include a number of other arrangements, such as those explained hereinafter. It is to be understood that both the foregoing description and the following description are exemplary only.

BRIEF DESCRIPTION OF THE DRAWINGS

The accompanying drawings, which are incorporated in and constitute a part of this description, illustrate several exemplary embodiments and together with the description, serve to explain principles of the embodiments. In the drawings,

FIG. 1 is a schematic perspective view of an exemplary embodiment of a module of cutlery.

FIG. 2A is a schematic perspective view of an exemplary spoon.

FIG. 2B is a schematic perspective view of an exemplary fork.

FIG. 2C is a schematic perspective view of an exemplary knife.

FIG. 2D is a schematic perspective view of an exemplary spark.

FIG. 3A is a schematic perspective view of exemplary utensils coupled to one another via exemplary continuous coupling strips.

FIG. 3B is a schematic perspective view of exemplary utensils coupled to one another via exemplary intermittent couplings.

FIG. 3C is a schematic perspective view of exemplary utensils coupled to one another via exemplary protrusions.

FIG. 3D is a schematic perspective view of exemplary utensils utilizing exemplary protrusions as a spacing feature.

FIG. 3E is a schematic plan view of an exemplary utensil including an exemplary coupling bead.

FIG. 3F is a schematic side view of exemplary utensils coupled by exemplary coupling beads.

FIG. 4 is a schematic plan view of an exemplary utensil identifying different regions of the utensil.

FIG. 5 is a schematic side view of an exemplary decoupler decoupling an exemplary utensil from an exemplary module of utensils.

DESCRIPTION OF EXEMPLARY EMBODIMENTS

Reference will now be made in detail to exemplary embodiments. Wherever possible, the same reference numbers are used in the drawings and the description to refer to the same or like parts.

FIG. 1 shows a schematic perspective view of an exemplary embodiment of a module 10 of disposable cutlery. Module 10 comprises a plurality of utensils 12, which appear in a stacked configuration here, but which may be arranged in other configurations. Module 10 may include at least one of a spoon 14, a fork 16, a knife 18, and a spork 20 (see FIGS. 2A-2D), or any combination thereof. Module 10 may be formed with as few as two utensils 12, as many as 10, 15, 20, or 30 utensils 12, or more, as any number of utensils 12 is contemplated for module 10.

In FIGS. 3A-3F, exemplary configurations for coupling utensils 12 to one another are shown. Exemplary couplers 22 function to couple at least two utensils 12 to one another. For example, as shown in FIG. 3A, couplers 22 may be in the form of continuous coupling strips 34. The couplers 22 may also be formed in discontinuous or intermittent coupling areas 36, for example, as shown in FIGS. 3B and 3C. Exemplary discontinuous or intermittent coupling areas 36 may couple as few as two utensils 12, as many as 10, 15, 20, 30, or 100 or more utensils 12, as any number of utensils 12 is contemplated for module 10. According to some embodiments, in addition to couplers 22, utensils 12 of a module 10 may also include, for example, a band, tie, string, or similar device around the utensils 12 of a module 10 to assist in orienting or securing module 10.

According to some embodiments, the couplers 22 may be formed via at least one of an adhesive and a common portion of a formable material, of which the utensils are made, regardless of whether the continuous strip configuration or the discontinuous or intermittent configuration—or both—are used. Additionally, in some embodiments, couplers 22 may be applied to one or both sides 30 of one or more

utensils 12. If adhesive is used, it may be applied in one or more continuous coupling strips 34 that couple the utensils 12 to one another and form module 10, for example, as shown in FIG. 1. The thickness of the coupling strips 34 may vary depending, for example, on the specific type of adhesive and/or the number of strips 34 used. The coupling strips 34 may be applied perpendicular to utensils 12 or at an oblique angle. Where multiple strips 34 are used, strips 34 need not have the same orientation, and instead may overlap each other or form a shape or pattern, for example, a decorative and/or branding pattern.

The exemplary formable material described herein may include, for example, plastic, combinations of plastics, or combinations of plastics and other materials suitable for use as disposable or reusable cutlery. For example, the formable material may include one or more of polystyrene, polyethylene, and polypropylene.

Adhesive may also be applied in a discontinuous or intermittent manner. For example, adhesive deposits may be placed in one or more of the gaps 24 between the utensils 12 in a module 10, or may be placed elsewhere, for example, between the overlapping surfaces of two adjacent utensils 12 in the module 10 (see, e.g., FIGS. 3E and 3F). The adhesive deposits may align vertically, but can be applied in any orientation, including a pattern or a random disbursement. Also, adhesive deposits may be used concurrently with coupling strips 34 or additional methods of coupling utensils 12 to one another.

An example of an additional method of coupling is welding, including spot welding, ultrasonic welding, vibration welding, and any other welding technique that may be suitable for coupling two utensils 12. Another example is soldering. Yet another example is hot melting. Any form of coupling at least two utensils 12 together by forming a common portion of formable material between the utensils 12 may be used. For example, this may be accomplished by applying heat to one or more of utensils 12 to cause the formable material of at least one utensil 12 to soften or melt. Upon cooling, the softened or melted material may form a common portion of formable material that couples two or more utensils to one another. In another example, forming a common portion of formable material may be accomplished by introducing additional formable material to a module 10 of utensils 12 and softening or melting the additional formable material. Upon cooling, the additional formable material will couple at least two utensils 12 via a common portion of formable material. Similarly, forming a common portion of formable material may be accomplished by introducing additional formable material to a module 10 of utensils 12, softening or melting one or more portions of the module 10, and applying the additional formable material such that it couples a plurality of utensils 12 when the melted portion or portions harden. According to some embodiments, the common portion of formable material may be formed in an integral manner, together with utensils 12, for example, via a molding process such as form molding or injection molding, where the common portion and the utensils 12 of module 10 are formed during the same molding process.

Referring to FIG. 2A, it shows a schematic perspective view of an exemplary spoon 14 that may be included as a utensil 12 in module 10. Spoon 14 has a top face 26 and a bottom face 28. Spoon 14 also has two sides 30 and an end 32. Top face 26, bottom face 28, sides 30, and end 32 may each have any number of profiles, including, for example, flat, straight, shaped, curved, or tapered. In some exemplary embodiments, spoon 14 is shaped such that a plurality of spoons 14 may be stacked on top of one another. In such a

5

stacked configuration, sides 30 of one spoon 14 may align vertically with sides 30 from an adjacent utensil 12 (e.g., another spoon 14).

Referring to FIG. 2B, it shows a schematic perspective view of an exemplary fork 16 that may be included as a utensil 12 in module 10. Fork 16 has a top face 26 and a bottom face 28. Fork 16 also has two sides 30 and an end 32. Top face 26, bottom face 28, sides 30, and end 32 may each have any number of profiles, including, for example, flat, straight, shaped, curved, or tapered. In some exemplary embodiments, fork 16 is shaped such that a plurality of forks 16 may be stacked on top of one another. In such a stacked configuration, sides 30 of one fork 16 may align vertically with sides 30 from an adjacent utensil 12 (e.g., another fork 16).

Referring to FIG. 2C, it shows a schematic perspective view of an exemplary knife 18 that may be included as a utensil 12 in module 10. Knife 18 has a top face 26 and a bottom face 28. Knife 18 also has two sides 30 and an end 32. Top face 26, bottom face 28, sides 30, and end 32 may each have any number of profiles, including, for example, flat, straight, shaped, curved, or tapered. In some exemplary embodiments, knife 18 is shaped such that a plurality of knives 18 may be stacked on top of one another. In such a stacked configuration, sides 30 of one knife 18 may align vertically with sides 30 from an adjacent utensil 12 (e.g., another knife 18).

Referring to FIG. 2D, it shows a schematic perspective view of an exemplary spork 20 that may be included as a utensil 12 in module 10. Spork 20 has a top face 26 and a bottom face 28. Spork 20 also has two sides 30 and an end 32. Top face 26, bottom face 28, sides 30, and end 32 may each have any number of profiles, including, for example, flat, straight, shaped, curved, or tapered. In some exemplary embodiments, spork 20 is shaped such that a plurality of sporks 20 may be stacked on top of one another. In such a stacked configuration, sides 30 of one spork 20 may align vertically with sides 30 from an adjacent utensil 12 (e.g., another spork 20).

FIG. 3A shows a portion of a plurality of utensils 12 stacked in an exemplary manner such that sides 30 are generally aligned. Coupling strip 34 couples utensils 12 to one another to form module 10. In FIG. 3A, coupling strip 34 is shown as a continuous strip. However, coupling strip 34 also may be applied in a discontinuous or intermittent manner. FIG. 3A also shows coupling strip 34 substantially perpendicular to sides 30, such that coupling strip 34 would appear to align substantially vertically when the module 10 of utensils 12 is oriented in an upright position. However, coupling strip 34 may be applied at any other angles and/or other lengths that couple at least two utensils 12 to one another.

Exemplary coupling strip 34 may comprise an adhesive, a common portion of formable material, or a combination of both. If coupling strip 34 is an adhesive, it can include any combination of adhesives known in the art. For example, such types of adhesives may include, but are not limited to, hot melt adhesive, epoxy, glue, resin, and cement. According to some embodiments, adhesive may be applied in a configuration that secures utensils 12 of a module 10 to one another, but which allows a user and/or a dispenser to break the bond between adjacent utensils 12. For example, a thinner coupling strip 34 may be used with stronger adhesives while a relatively weaker adhesive may be applied in relatively thicker coupling strips 34.

According to some embodiments, coupling strip 34 may include a common portion of the formable material that

6

forms utensils 12. For example, the common portion may be formed by softening or melting a portion of at least one side 28 of a utensil 12 and allowing the softened or melted portion to cool in a configuration such that it couples the utensil 12 with at least one adjacent utensil 12. The common portion may be formed, for example, by introducing an additional piece of formable material and softening or melting some or all of that piece such that upon cooling it couples at least two utensils 12 to one another. The common portion may further be formed by introducing an additional piece of formable material, softening or melting a portion of one or more utensils 12, and attaching the additional piece to the softened or melted portion or portions of the utensils 12, such that upon cooling at least two utensils 12 are coupled to one another. Softening or melting the formable material may be accomplished by any method known in the art, including but not limited to the application of heat, electricity, and/or friction. According to some embodiments, the common portion of formable material may be formed in an integral manner, together with utensils 12, for example, via a molding process such as form molding or injection molding, where the common portion and the utensils 12 of module 10 are formed during the same molding process.

In some embodiments, the coupling strip 34 may contact at least one of the top face 26, bottom face 28, and one of sides 30 of a utensil 12 to be coupled. When coupling strip 34 contacts at least one side 30, coupling strip 34 may also extend into the gaps 24 between each utensil 12, and may also come into contact with the top face 26 or bottom face 28 of one or more utensils.

FIG. 3B shows a plurality of exemplary utensils 12 stacked such that sides 30 are generally aligned. Coupling areas 36 couple at least two utensils 12 to one another. Coupling areas 36 may include adhesive deposits, common portions of formable material, or a combination of the two. If adhesive deposits are utilized, the adhesive may be any combination of adhesives known in the art, including, but not limited to, hot melt glue, epoxy, glue, resin, and cement. The adhesive deposits may be applied in any configuration that serves to couple at least two of the utensils 12. The adhesive deposits may be configured such that a user and/or a dispenser can break the adhesive bonds and separate a utensil 12 from module 10. The adhesive deposits may be located such that at least one deposit contacts the sides 30 of two adjacent utensils 12. The adhesive deposits may also be located between the utensils 12, such that the adhesive deposit contacts the top face 26 of one utensil and the bottom face 28 of another utensil 12. If the adhesive deposits are positioned between the utensils 12, the size, shape, and material make-up of the adhesive deposit may influence the size of the gaps 24 between adjacent utensils 12.

Coupling areas 36 may also include common portions of formable material shared by at least two adjacent utensils 12. In some embodiments, the common portion may be formed by softening or melting a portion of at least one side 30 of a utensil 12 and allowing the softened or melted portion to cool in a configuration such that it couples the utensil 12 with at least one adjacent utensil 12. According to some embodiments, the common portion may be formed by introducing additional pieces of formable material and softening or melting some, or all, of those pieces such that upon cooling at least two utensils 12 are coupled to one another. The common portion may further be formed by introducing one or more additional pieces of formable material, softening or melting a portion of one or more utensils 12, and attaching the additional piece to the softened or melted portion or portions of the utensils 12, such that upon cooling

the at least two utensils **12** are coupled. The amount of formable material may be varied to control the gaps **24** between adjacent utensils **12**. Softening or melting the formable material may be accomplished by any method known in the art, including but not limited to the application of heat, electricity, friction, or a combination thereof. The common portions of formable material may be configured such that a user and/or a dispenser can separate the utensils **12** from one another.

FIG. **3C** shows a plurality of exemplary utensils **12** stacked such that sides **30** are generally aligned. According to some embodiments, the utensils **12** may have at least one protrusion **38** made from formable material. The protrusions **38** may be used to facilitate coupling adjacent utensils **12** to one another. The protrusions **38** may be provided in any number of shapes, or in a shape that at least partially spans the gaps **24** between utensils **12**. For example, the protrusions **38** may be located on the sides **30**, the top face **26**, or the bottom face **28** of the utensils **12**. The utensils **12** may be coupled by protrusion coupling areas **40**. For example, protrusion coupling areas **40** may include adhesive and/or a common portion of formable material.

According to some embodiments, at least two utensils **12** may be coupled via adhesive deposits on the protrusions **38**. The adhesive deposits may be any combination of adhesives known in the art, including, but not limited to, hot melt glue, epoxy, glue, resin, and cement. For example, the adhesive deposits may be applied to the protrusions **38** such that at least two utensils **12** are coupled to one another.

According to some embodiments, at least two utensils **12** may be coupled via a common portion of formable material that includes at least one protrusion **38**. Coupling may be accomplished by softening or melting a portion of formable material of one or more of utensils **12** such that upon cooling, the utensils **12** become coupled to one another. For example, the side **30** of a utensil **12** may be softened or melted such that it joins with protrusion **38** upon cooling, or the protrusion **38** may be softened or melted such that it joins with a portion of a utensil **12** upon cooling. Of course, the protrusion **38** and the side **30** of a utensil **12** may both be softened or melted such that they join each other upon cooling. According to some embodiments, the common portion of formable material may be formed in an integral manner, together with utensils **12**, for example, via a molding process such as form molding or injection molding, where the common portion and the utensils **12** of module **10** are formed during the same molding process. According to some embodiments, two protrusions **38** may be aligned such that the two protrusions **38** combine after softening or melting to form the common portion of formable material.

Softening or melting the formable material may be accomplished by any method known in the art, including but not limited to the application of heat, electricity, friction, or any combination thereof. In some embodiments, the common portions of formable material may be configured such that a user and/or a dispenser may separate the utensils **12** from one another. The protrusions **38** may be formed such that upon decoupling, the protrusion **38** completely detaches from previously-coupled utensils **12**. Alternatively, the protrusion **38** may be formed such that upon decoupling, it remains attached to one of the previously-coupled utensils **12**.

Protrusions **38** may be formed in various shapes and sizes. Exemplary shapes include, without limitation, at least one of a square, a rectangle, a triangle, a circle, a cylinder, a sphere, a cube, a box, a pyramid, a star, and the like. The chosen shape can provide a formable surface area configured such

that after coupling—either by adhesive, by forming a common portion of formable material, or both—the bond may be broken by a user and/or a dispenser. According to some embodiments, protrusions **38** are shaped such that they also assist in aligning or maintaining the alignment of the stack of utensils **12** before application of an adhesive or formation of a common portion of formable material.

FIG. **3D** shows a plurality of exemplary utensils **12** stacked such that the sides **30** are generally aligned. In some embodiments, the protrusions **38** may perform a spacing function. For example, the protrusions **38** may be formed at any location on one or more utensils **12**. The protrusions **38** may occupy some amount of space within the gaps **24** between utensils **12**, and may influence the separation between utensils **12**. In some embodiments, one or more utensils **12** may be coupled to one another along one or both sides **30** of the utensils **12**. If the utensils **12** are only coupled along one side **30**, then module **10** may have some degree of flexibility. If the protrusions **38** are provided along one side **30** of the utensils **12**, and the utensils **12** are coupled along the same side **30**, then flexibility of the module **10** may be increased. In some embodiments, the flexibility may be influenced by controlling the size of the gaps **24** between utensils **12**. Likewise, the gaps **24** between utensils **12** may be influenced by the size, shape, and/or location of protrusions **38**. The protrusions **38** may perform a spacing function regardless of whether they are used to couple the utensils **12** to one another.

FIG. **3E** shows an exemplary utensil **12** including a coupling area **36** in the exemplary form of a coupling bead **37** disposed on utensil **12**. In some embodiments, at least one coupling bead **37** may be used to couple a plurality of utensils **12** to form module **10**, as shown in FIG. **3F**. While FIGS. **3E** and **3F** show one coupling bead **37** per utensil **12**, the embodiments should be understood to encompass any number of coupling beads **37** on each utensil **12**. Coupling bead **37** may be configured with its center point on longitudinal axis **C**. Coupling bead **37** may include adhesive deposits, common portions of formable material, or a combination of the two. If adhesive deposits are utilized, the adhesive may be any combination of adhesives known in the art, including, but not limited to, hot melt glue, epoxy, glue, resin, and cement. The adhesive deposits may be applied in any configuration that serves to couple at least two of the utensils **12**, for example, as shown in FIG. **3F**. The adhesive deposits may be configured such that a user and/or a dispenser can break the adhesive bonds and separate a utensil **12** from module **10**. The adhesive deposits may be located between the utensils **12**, such that the adhesive deposits contact the top face **26** of one utensil and the bottom face **28** of another utensil **12**. If the adhesive deposits are positioned between the utensils **12**, the size, shape, and material make-up of the adhesive deposit may influence the size of the gaps **24** between adjacent utensils **12**.

Coupling beads **37** may also include common portions of formable material shared by at least two adjacent utensils **12**. In some embodiments, the common portion may be formed by softening or melting a portion of a utensil **12** and allowing the softened or melted portion to cool in a configuration such that it couples the utensil **12** with at least one adjacent utensil **12**. According to some embodiments, the common portion may be formed by introducing additional pieces of formable material and softening or melting some, or all, of those pieces such that upon cooling at least two utensils **12** are coupled to one another. Alternatively, the common portion may be formed by softening or melting a portion of one or more utensils **12** and introducing one or

more additional pieces of formable material, configured such that when the at least two utensils **12** cool, they may couple to one another. The amount of formable material may be varied to control the gaps **24** between adjacent utensils **12**. Softening or melting the formable material may be accomplished by any method known in the art, including but not limited to the application of heat, electricity, friction, or a combination thereof. According to some embodiments, the common portion of formable material may be formed in an integral manner, together with utensils **12**, for example, via a molding process such as form molding or injection molding, where the common portion and the utensils **12** of module **10** are formed during the same molding process. The common portions of formable material may be configured such that a user and/or a dispenser can separate the utensils **12** from one another.

FIG. **4** shows a schematic plan view of an exemplary utensil **12** divided into five regions: a handle end region **42**, a first middle region **44**, a second middle region **46**, a third middle region **48**, and a functional end region **50**. According to some embodiments, at least two utensils **12** may be coupled at one or more locations within one or more of the five identified regions. According to some embodiments, the utensils **12** may be coupled along one side **30**. According to some embodiments, the utensils **12** may be coupled along both sides **30**. The coupling locations on each side **30** of the utensils **12** may mirror each other. For example, a utensil **12** may be coupled on both sides **30** at each of the first middle region **44**, the second middle region **46**, and the third middle region **48**. The coupling locations need not mirror each other, however. For example, a utensil **12** may be coupled on one side **30** at first middle region **44** and third middle region **48**, while on the other side **30** the utensil **12** may be coupled at the second middle region **46**. Setting coupling locations at any additional combination of sides **30** and/or regions is within the scope of these embodiments.

FIG. **5** shows a schematic side view of a plurality of utensils **12** coupled by couplers **22**, where one utensil **12** is being decoupled from module **10** via a decoupler **52**. The couplers **22** are shown in a continuous strip configuration, although they may be utilized in other forms, such as those identified in connection with previously described embodiments. For example, the couplers **22** may be formed in discontinuous or intermittent sections. The discontinuous or intermittent sections may couple as few as two utensils **12** or as many as 10, 15, 20, or 100 or more utensils **12**, as any number of utensils **12** is contemplated for a module **10**. The couplers **22** are not limited to continuous or discontinuous/intermittent sections, however. For example, the couplers **22** may be formed via at least one of an adhesive and a common portion of the formable material, regardless of whether the continuous strip configuration or the discontinuous or intermittent configuration—or both—are used.

The exemplary decoupler **52** may be part of, for example, a conventional dispenser. In the exemplary embodiment shown, the decoupler **52** is a generally wedge-shaped tip configured to be inserted into a gap **24** between two utensils **12**. According to some embodiments, however, decoupler **52** does not have a wedge-shaped tip. The size of the decoupler **52** may force the utensils **12** on either side of the decoupler **52** in opposite directions, breaking the bond or bonds (e.g., adhesive bonds and/or bonds formed via a common portion of formable material) between those utensils **12**. According to some embodiments, the tip of the decoupler **52** may apply pressure to the couplers **22** directly, severing the coupler **22** material. According to some embodiments, the decoupler **52** may apply pressure to the couplers **22** directly and may also

force the utensils **12** on either side of the decoupler **52** in opposite directions. In other embodiments, the decoupler **52** (e.g., a decoupler without a generally-wedge shaped tip) may apply a force to an individual utensil **12** such that the bond or bonds (e.g., adhesive bonds and/or bonds formed via a common portion of formable material) coupling that utensil **12** to at least one other utensil **12** is/are broken. The decoupler **52** may be operated by direct user input, by user input transformed by a system providing mechanical advantage, or by independent power source such as, for example, an electric motor and/or electric, pneumatic, or hydraulic actuator.

The decoupler **52** is not limited by size or shape. According to some embodiments, the decoupler **52** may include a thin, sharp edge, which is inserted into the gap **24** between utensils **12** and severs the couplers **22** (e.g., FIG. **5**). According to some embodiments, the decoupler **52** may include a clamp-shaped head that partially surrounds one utensil **12** and applies a force that decouples at least one of the utensils **12** from module **10**. In other embodiments, the decoupler **52** may include a round head. In further embodiments, the decoupler **52** may include a partially round head that utilizes a camming action to rotatably decouple one or more utensils **12** from module **10**. The decoupler **52** is similarly not limited in quantity. For example, a decoupler **52** may include a plurality of portions (e.g., head, tip, etc.) that work together or independently to decouple one or more of utensils **12** from a module **10**.

According to some embodiments, the decoupler **52** may be part of a dispenser for dispensing individual utensils **12**. The dispenser may be configured to receive one or more modules **10** of utensils **12**, and may utilize a decoupler **52** to decouple utensils **12** from a module **10**, individually and/or in groups. The dispenser may also hold one or more types of utensils **12**, including one of at least a spoon **14**, a fork **16**, a knife, **18**, and/or a spork **20**.

It will be apparent to those skilled in the art that various modifications and variations can be made to the structures and methodologies described herein. Thus, it should be understood that the invention is not limited to the subject matter discussed in the description. Rather, the present invention is intended to cover modifications and variations.

What is claimed is:

1. A module of cutlery, the module comprising:
 - more than two utensils comprising a formable material, each of the utensils comprising a handle with a top face, a bottom face, and pair of sides,
 - wherein the more than two utensils are separably coupled to one another via a unitary coupler in the form of a common portion of the formable material formed along a length of the utensils by softening or melting and by allowing the softened or melted portion to cool so as to stack the top face of a utensil below the bottom face of an adjacent utensil in a substantially parallel configuration.
2. The module of claim 1, wherein the more than two utensils are stacked.
3. The module of claim 1, wherein the more than two utensils comprise at least one of a fork, a spoon, a knife, and a spork.
4. The module of claim 1, wherein the formable material comprises at least one material selected from the group comprising polystyrene, polyethylene, and polypropylene.
5. The module of claim 1, wherein the common portion is formed from at least one of hot melting, soldering, spot welding, and ultrasonic welding.

6. The module of claim 1, wherein at least one of each pair of utensils comprises at least one protrusion, wherein the at least one protrusion forms the common portion of the formable material.

7. The module of claim 6, wherein the at least one protrusion is configured to at least partially detach from at least one of each pair of utensils. 5

8. The module of claim 1, wherein the utensils are separably coupled to one another via a plurality of coupling locations. 10

9. The module of claim 1, further comprising a band configured to assist retaining the more than two utensils to one another to form the module.

10. A module of cutlery, the module comprising: 15

more than two utensils comprising a formable material, each of the utensils comprising a handle with a top face, a bottom face, and pair of sides, 20

wherein the more than two utensils are separably coupled to one another via a bonding coupler in the form of a common portion of the formable material formed along a length of the utensil by softening or melting and by allowing the softened or melted portion to cool so as to stack the top face of a utensil below the bottom face of an adjacent utensil in a substantially parallel configuration. 25

* * * * *